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WELCOME TO EURO MARBLE

Thank you for an opportunity to introduce you to our team and some of the work we can assist you with on your projects.

We have produced and collected some documentation that we hope will be useful to you in understanding, selecting and specifying natural stone projects.

The following documents are included:

1. Care and Maintenance of Stone Products
    - Summary information on how to best care for natural stone products
2. Sealing Information
    - An article discussing the benefits and limitations of sealing and a list of some of the companies that offer professional sealing services
3. Natural Stone Processing
    - Summary information on how natural stone is processed when cut and how the patterns can be matched
    - List of Vertical Joints and Edge Profiles that we normally can produce
4. Specification of Dimension Stone
    - An article on a number of standard properties of stone that can be used for a selection criteria of stones for specific use
5. Slip Resistance
    - An article on practical aspects of slip resistance of stone
6. Fixing Information
    - An excerpt from a natural stone handbook detailing options for vertical fixing of stone
    - Specifications of the fixing system that we normally use

Thank you again for your interest in Euro Marble.

Care and Maintenance of Stone Products

Stone is a natural product and simple care and maintenance will keep it looking beautiful for many years to come. Here are some recommendations for routine care and cleaning.

Precautions

- Use coasters under all glasses, particularly those containing alcohol or citrus juices. Many common foods and drinks contain acids that will etch or dull the stone surface. The use of sealers does NOT prevent acid from attacking the stone, especially marble and limestone.
- Do not place hot items directly on the stone surface, but use trivets or mats under hot dishes and placemats under china, ceramics, silver or other objects that can scratch the surface.
- Do not stand on benchtops or place excessive weight or force on the benchtop, particularly in the areas were there is not much stone (eg. in front of the sinks or hotplates) as the stone may crack.

Cleaning Procedures & Recommendations

Floor Surfaces

- Mop-up interior floors frequently using a clean non-treated dry dust mop. Sand dirt and grit do the most damage to natural stone surfaces due to their abrasiveness.
- Mats or area rugs inside and outside an entrance will help to minimize the sand, dirt and grit that will scratch the stone floor. Be sure that the underside of the mat or rug is a non-slip surface.
- Do not use vacuum cleaners that are worn. The metal or plastic attachments or the wheels may scratch the surface.
- When using a wet mop, use a pH-neutral detergent with water, as per manufacturer's direction. We suggest using Bellenzioni Lem-3 detergent for stone.

Bathrooms and Other Wet Areas

- In the bathrooms or other wet areas, soap scum can be minimized by using a sponge after each use. To remove soap scum, use a non-acidic soap scum remover or a solution of ammonia and water (about 1/2 cup ammonia to a gallon of water).
- Frequent or over-use of an ammonia solution may eventually dull the surface of the stone.
- Do not use Pino-Clean as it contains turpentine oil and may stain the stone.

Vanity Top Surfaces

- Vanity tops may need to have a penetrating sealer applied. A good quality marble wax or non-yellowing automobile paste wax can be applied to minimize water spotting.
- Aerosol cans in contact with water may rust and cause staining.
- Acetone spills will cut back the polish.

Food Preparation Areas

- In food preparation areas, the stone may need to have a penetrating sealer applied.
- If a sealer is applied, be sure that it is non-toxic and safe for use on food preparation surfaces.

Outdoor Pool & Patio and Other Outdoor Exposed Areas

- In outdoor pool, patio or hot tub areas, flush stone with clear water and use a mild bleach solution to remove algae or moss.
- Pools may contain chlorine and this may have an effect on some stones.
- Salts may effervescence and cause stains in the stone.

Other Surfaces

- Clean stone surfaces with a few drops of pH-neutral cleaner, stone cleaners or a mild liquid dishwashing detergent and warm water. Use a clean mop on floors and a soft cloth for other surfaces for best results. Too much cleaner or soap may leave a film and cause streaks.
- Do not use products that contain lemon, vinegar or other acids on marble or limestone. Rinse the surface thoroughly after washing with the soap solution and dry with a soft cloth. Change the rinse water frequently.
- Do not use scouring powders or creams as these products contain abrasives that may scratch the surface.

DO's and DON'T's

- Do dust mop floors frequently
- Do clean surfaces with mild detergent or stone soap
- Do thoroughly rinse and dry the surface after washing
- Do blot up spills immediately
- Do protect floor surfaces with non-slip mats or area rugs and countertop surfaces with coasters, trivets or placemats

- Don't use vinegar, lemon juice or other cleaners containing acids on marble, limestone, travertine or onyx surfaces
- Don't use cleaners that contain acid such as bathroom cleaners, grout cleaners or tub and tile cleaners
- Don't use abrasive cleaners such as dry cleansers or soft cleansers
- Don't mix bleach and ammonia; this combination creates a toxic and lethal gas

Cleaners and Sealers

The following products may be used to care for your marble or granite products.

- Bellinzioni Lem-3 is a highly concentrated neutral detergent for cleaning marble or granite. Method of use for general maintenance: 1 spoon in 1 litre of water; for grimy conditions use pure. After the application rinse very well and allow to fully dry.

- Bellinzoni Liquid Wax and Tenax Cera Liquid are examples of waxes available in liquid and solid form that are used to bring up a shine in the stone. Both products are in a liquid form and a small amount is applied to a soft white cloth. This is then applied to the stone surface and, after drying, buffed off with a dry white soft cloth. Such a finish requires to be maintained at least once a week.

- Tenax Hydrex or Delta Research Quasar Sealing are stone sealers that should be used. In general, sealing of stone products acts to prevent the top from being stained by such products as oil, red wine and coffee. As mentioned, sealing prevents but does NOT stop staining from occurring. Thus, products which may stain the stone should be cleaned from the surface as soon as possible. Alcoholic or solvent-based products such as thinners will remove the sealer. When this occurs the sealer should be reapplied. Sealing of the stone product should otherwise occur every six months. These products are available in a liquid form and should be applied with a soft white cloth. Such products are solvent based and we recommend that the room be well ventilated when applying. We recommend that only one coat of sealer be applied and left to dry for at least one hour before reapplying the sealer again. Should you reapply the sealer without allowing the first coat to dry properly, you run the risk of the sealer flashing off. Flashing off is a patchy residue that forms on the surface of the stone by reapplying the sealer too soon after applying the first coat.

Should you care to use other products available in the marketplace other than the ones mentioned above, it is suggested that you apply any products to a small inconspicuous area first to see if there is any undesirable reaction to the product used. In general, it is suggested that products consisting of acids or alkalis and solvent-based products should not be used on stone benchtops. Some products such as Pino-Clean which contain oil should not be used on stone tops. Build-up of residue, such as fats or salts, on the surface of the stone can be removed with a very fine grain steel wool, grade 000.

We hope that you have many years of enjoyment in the use of your natural stone products.

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Sealing Information

Limestone, Pietra stones and Marbles: "To seal or not to seal?"

We are regularly approached by architects and designers seeking information and advice on whether it is necessary to seal natural stone. To determine whether to seal natural stone, it is first required to have a through understanding of what sealing stone means in practical terms.

Sealers in the stone industry are generally termed as impregnators, simply because they impregnate the interior of the stone with resins or silicones that funnel through the pores of the natural stone surface or semi-penetrated coatings and then leave a coating on the surface of the stone. Coating sealers are available in the form of urethanes, water-based, epoxy-based or solvent-type coatings.

The main objective of the impregnator is to protect the interior of the natural stone from staining. They thus help to prevent fluids from penetrating into the interior of the natural stone through its pores. However, impregnators do nothing to protect the face surface of the stone. They do not prevent etching or scratching of the surface of the stone by, for example, citric acids or alcohols.

Stone companies need to explain to their customers that stone sealers are not a guarantee from staining or general wear. For example, continuous alcohol spills left on the stone for a period of time will eventually dissipate the internal resin or silicon coating of the stone and thus make it vulnerable to staining.

Impregnators / sealers are therefore preventative measures that provide extra protection to the stone. Even though the stone has been sealed, it needs to be maintained and cleaned with proper stone products, such as ph-neutral detergents. Sealers will last longer and work better when the stone is properly cared for and sealers always need to be reapplied periodically because they do not last forever, even in mild stress conditions.

So, how do the impregnators work? Impregnators are a mixture of silicones or resins added to a mineral spirit which is a strong solvent, which, incidentally, is why they have a strong odour. There are other sealers / impregnators which are water-based. The mineral spirit is added to the mixture to act as a carrier for the silicones and resins to travel through the stone. The mineral spirit rides the resin and silicone into the stone as a liquid form. The mineral spirit then evaporates out of the stone and leaves the silicon and resin embedded inside. The silicon

and resin now begin to cure into a solid form, thus forming a fluid repellent membrane in the pores of the stone. All of this happens within 5 to 10 minutes, however the complete curing time is usually 12 hours due to the moisture content of the stone. Most sealers will prevent water and oil penetration, but it is very difficult to stop hot cooking oil from penetrating into the stone because it can melt the resin in the stone.

It is imperative to make sure that the stone is completely dry and clean before applying an impregnator and it must remain dry for at least 12 hours after the application. Applying a thick coat of an impregnator is not the best way to seal the stone properly, as thin coats are considerably more effective. Furthermore, because a natural stone can only absorb a limited amount of impregnator, over application can be detrimental to the stone. Depending on the manufacturer of the impregnator, we recommend the “thirty minutes” rule-of-thumb: if the stone completely absorbs the first coat from the surface within five minutes, you will need to add another coat. If any of the sealant remains on the surface after thirty minutes, wipe it off with a dry clean cloth and no further coats should be applied. Failing to wipe off the remaining excessive sealer can result in the surface of the stone looking dull or hazed after the sealer dries. This is because some of the resin or silicone remained on top because the stone could not absorb it.

A good way to measure the strength of an impregnator / sealer is to apply water to the surface and look for darkening of the colour. If the stone darkens, the moisture has penetrated and a fresh coat of the sealer needs to be applied. A fact to remember is that even if the moisture does not bead up on the surface, it does not necessarily mean that the impregnator / sealer is not working. Beading usually only occurs with a fresh application of the sealer. As the sealer ages, its ability to protect the stone is reduced, and the beading action is diminished.

The time to break down an impregnator is accelerated by certain conditions. For example, in a high-traffic floor area, the impregnator wears as the stone surface wears down, or on stone kitchen-tops sealers wear down as the stone is bombarded with citric acids and alcohols. This is due to the fact that impregnators only penetrate approximately 1.5mm or less into the interior of the stone. Some stones are less porous than others therefore the sealer may have less penetration. Similarly, some stones require one application of the sealer, while others require 2 or 3.

Now that we know how sealers work and what they are supposed to do, the main question remains: “to seal or not to seal?” The answer in most cases is yes! The reason is because we are taking the stone from its protected natural environment (the earth), and then we saw it, grind it, polish it, eat on it, walk on it and spill things on it. Penetrating stone sealers are manufactured to protect and preserve the natural colour minerals and bonding agents of natural stone. Along with a quality stone care program, natural stone will be protected for life.